

ABSTRACT

The invention relates to a method for re-grinding and polishing free-form surfaces, especially rotationally symmetrical aspherical optical lenses by tools. According to the inventive method, the virtual levelling of a coarsely pre-grounded lens, for example, is calculated by interferometric measurement and by calculation with a desired form; pressure, rotational speed and sojourn time of the tools are controlled by means of said virtual levelling and the surface of the lense, for example, is divided up into partial areas. The partial areas correspond to the size of the tools. A zeroized approximation is calculated for the control of the tools. Said zeroized approximation enables the interaction of the partial areas to be estimated. By taking into account the estimated interaction, a sojourn time for each tool on each partial area is calculated as a function of pressure and rotational speed of the tool for each partial area, using a linear equation system and the tools are controlled accordingly. The invention also relates to tools and tool arrangements in addition to especially precise aspherical lenses.